

(1) Number of pages 6 Sheets
(2) Date of repair 12.8.82
(3) Initials of the Referencer _____

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Revenue DEPARTMENT

G.O. No.	76	Press.
B.P. No.		Mis.
Dated	9.1.1878	197

Not to be folded or roughly handled

Public Department
Proceedings of the Madras Government
Read the following

INDIA OFFICE;
London, the 19th July 1877.

Statistics & Commerce.
No. 101.

To His Excellency the Right Honourable the GOVERNOR GENERAL of India
in Council.

MY LORD,—I transmit for your information, and for such action
as may be necessary, a copy of a
memorandum* by the Army Sanitary Commission on the Punjab sanitary report for 1875.

* Dated 30th May 1877.

2. As pointed out by the Commission, and also by the Local Government, too much prominence is given in this report to discussions regarding cholera, and there is a deficiency of information on the great subject of practical sanitation.

3. On the other hand, the steps taken by Dr. DeRenzy for circulating among the village population a knowledge of the elementary principles of sanitary science meet with my warm commendation, and I shall be glad to hear of similar measures having been adopted in all the other Provinces.

4. With reference to the remark in para. 7 of the memorandum, Your Excellency has probably already under consideration the question of utilising the officers of the Vaccination Department for general sanitary work in the several Provinces, as has been already done with apparently much success in Bombay. I request to be informed of any measures taken in this direction from time to time.

5. The excessive fever death-rates shewn in some towns and districts point to the existence in such localities of some serious sanitary defects. In all such cases special inquiries should be instituted, and, as suggested by the Commission, a commencement might be made with the worst municipal towns, and practical experience thus be acquired with a view to further action.

6. The remarks on the general unhealthiness of the Sanawar Asylum appear to call for particular attention, with a view to the improvement of both the water and the milk supplied to that institution.

I have the honour to be,

MY LORD,

Your Lordship's most obedient, humble Servant,

SALISBURY.

Memorandum of the Army Sanitary Commission on the Report of the Sanitary Commissioner for the Punjab for 1875.

(2)

The following have been the annual numbers of deaths registered in the Province since the census year :

Years.	Deaths.
1869	453,821
1870	418,926
1871	263,378
1872	430,608
1873	357,153
1874	316,713
1875	447,208

So far as can be judged of by the figures, the year 1875 was a very unhealthy year. Dr. DeRenzy thinks it probable that some part of the increase of deaths may be due to better registration in the municipal towns, but on the other hand there was a cholera epidemic during 1875, which caused 6,246 deaths, and the registered fever mortality underwent a large augmentation. It is true that little dependence can be placed on fever diagnosis in India, but such as it is, there were 279,841 deaths attributed to fever, being an excess of 89,210 deaths over those of the preceding year, the state of the diagnosis remaining, no doubt, the same.

The death-rate during 1875 amounted to 25.57 per 1,000, a fact which, when tested by other facts, shows that the registration of deaths is far from being reliable.

This point is fully dealt with in the Proceedings of the Government of the Punjab on this report, and as test facts the following death-rates for five towns, in which the Proceedings state that "the registration was probably fairly accurate", will show how much below the actual truth the death registration is at present :

	Death-rate per 1,000.
Amritsar	62
Delhi	51
Lahore	43
Peshawar	45
Mooltan	34

It is unnecessary to discuss the subject further, as it is receiving the attention of the Government, which will, no doubt, take practical steps for improving the registration. Even as matters are at present, the patent fact which has to be dealt with by sanitary works and measures lies within these enormous ascertained death-rates, which are, no doubt, representative cases, and could be reproduced all over the country.

2. The following table, extracted from the Government Proceedings, shows the chief registered death causes for the seven registration years already alluded to :

Years.	Total deaths registered.				
	Cholera.	Small-pox.	Fevers.	Bowel complaints.	All others.
1869	9,258	53,169	272,946	30,953	87,495
1870	469	27,163	275,093	27,249	88,952
1871	369	25,544	213,548	21,678	102,249
1872	8,727	23,728	264,711	23,345	110,097
1873	148	25,699	219,909	19,640	91,757
1874	78	12,026	190,631	16,407	97,571
1875	6,246	13,594	279,841	27,550	119,977

(3)

3. The following abstract shows the monthly incidence of cholera mortality in 1875 :

	Deaths.		Deaths.
January	4	July	747
February	4	August	1,515
March	4	September	2,117
April	10	October	1,358
May	41	November	129
June	316	December	1

It is stated, "with some approach to certainty", that the deaths registered as due to cholera during the first four months were not cholera. Dr. DeRenzy considers that these facts show cholera to be essentially a hot weather disease. A table in the report containing the number of rainy days in each month shows that 70 per cent. of the rainy days took place in the four months, June to October inclusive, in which the maximum cholera mortality took place. There was hence both high temperature and moisture during these months.

4. The purely local character of those outbreaks which taken together make up the epidemic mortality of 1875 is shown by the facts that out of 487 registration circles in the Punjab, only 162 or about 31 per cent. were attacked, and that of 35,740 villages in the Province no more than 803, or about 2 1/2 per cent., yielded cholera deaths, although no quarantine restrictions were applied.

Of the 803 attacked villages 582 had fewer than five deaths, and in 256 the mortality exceeded this proportion.

5. With these facts before us it is scarcely necessary to discuss cases of "importation"; but as this matter is of practical importance in the Cholera Inquiry, it may be useful to deal briefly with the cases alleged in the present report.

The following case, in which the dates are given by Dr. Whitwell, will illustrate the character of the evidence adduced in favour of importation.

In Amritsar District there are 107 towns and villages, which yielded 1,268 cholera deaths.

The first case was in June, and the months of maximum mortality were August (504 deaths), and September (583 deaths). Amritsar was attacked in July (26 deaths), and had 492 deaths in August. Under this distribution of the epidemic the alleged importation took place at Kohali, 14 miles from Amritsar. On the 31st August a Sikh traveller arrived at the rest-house at Kohali. It is not stated whence he came or what was his state of health. He might have come from an unaffected district in good health. Next day, however, this man was taken ill, and died of cholera. Five feet from the rest-house is an unprotected well, from which, it is presumed, the man got water. The day after his death, namely, on the 2nd September, cholera appeared in the village, and 24 deaths out of 722 people took place. Every one of the cases took place in people who used the water from the rest-house well. Dr. Whitwell asks—"Am I exceeding the bounds of probability in saying that this solitary traveller, alone, friendless, unattended, must have contaminated the water of this well in his efforts to obtain water? . . . so that, as far as it is possible to show, here was an undoubted instance of cholera being propagated by water pollution."

One undoubted fact is that cholera was epidemic all over the region of the Punjab. Another fact must be acknowledged that only the people, including this traveller, who drank of the same well had cholera. The villagers using other three wells escaped.

On consulting the dates, however, we find that the presumed effect, viz., the attack of the villagers, followed on the traveller's illness and death after a few hours only.

The traveller was attacked on the 1st September, the first villager on the 2nd September. There was hence no time for incubation. In the absence of several important links, among others, the real condition of the well, another question may be asked, namely, does not the evidence as it stands rather lead to the idea that all the cases, including that of the traveller, were due to "imported water"? Before this view could be accepted, it would be necessary to show that the water was impure, that the traveller had made use of it, and that the inhabitants who supplied themselves with water from the well were exposed to no other local causes than those common to the rest of the villagers.

A similar account is given of the introduction of cholera into Amritsar itself. On July 26th in a Cashmiri Muhammadan, and to this body

The following was the presumed origin of cholera in Amritsar: "A roaming fakir of Jummo" (there is no evidence that cholera was then in Jummo or in any place through which the man had passed) arrived in the city "just previous to the outbreak" (no date given), and took up his residence in a mosque, and died there 36 hours afterwards with all the symptoms of cholera." But "this case was not seen by a medical officer". His quarters in the mosque were within "a few feet of the well", the mouth of which had no parapet, and "the probabilities are, therefore, that the man's discharges were washed into the well and poisoned the water" (on this point there is no evidence whatever). The Cashmiris used the water from this well, and they were the first to suffer from cholera. There were 80 cases among them; but the total deaths in Amritsar were 756.

These two instances give the circumstances more in detail than other cases of presumed importation, which may be said to amount to simple coincidences, communication of the disease having been adopted not as proved, but as explaining the phenomena.

For example, a man arrives at Delhi from Kurnul on May 10th (where there was no cholera, as shown by the statistics). He is seized with cholera at Delhi, where cholera appeared on May 6th, four days before his arrival. The man was attacked on the 10th, and his son on the 14th. Surely there is nothing in this to prove importation.

It would serve no good purpose to discuss these cases further. We must refer again to our instructions for the cautions to be observed in investigating such cases, and the present cases only serve to show how difficult it is to keep all the points in mind at the time and to avoid what afterwards appear to be very obvious sources of error.

6. So far as any practical results have followed from examination of instances of presumed infection in the Punjab, these may be briefly summed up in the following words of the Proceedings of Government on Dr. DeRenzy's report: "In the remarks of the Sanitary Commissioner upon the little value of quarantine as a safeguard against cholera, the Lieutenant-Governor entirely agrees. The system of quarantine, except under the most exceptional circumstances, the Lieutenant-Governor considers to be altogether mischievous and injurious." He is, however, not unwilling to give this method of protection a fair trial in special cases, which is indeed the very most that can be said on behalf of the system.

It need only be added that the experience of 1875 showed that quarantine restrictions were of no use in any part of India. Of this truth a striking confirmation is given by the Lieutenant-Governor in the case of Murree in 1876, which, being a large and important military station, was included in a strict quarantine, until after cholera had actually broken out among the children at this station. The case was inquired into by the Officiating Sanitary Commissioner whose report of 3rd November 1876 states the following conclusions:

"1st, that the disease was *not* imported into Murree, but originated there spontaneously; 2nd, that it was localized there; 3rd, that it spread by means of atmospheric agency, aided by direct action of its specific dejector from the human body."

The report itself has not been printed in the Punjab report for 1875, so that there is no evidence; only the conclusions are given, and no remark can be made on them except the one practical conclusion which may be put as a question, viz.—"Why, in so fine a climate and position, 8,000 feet above the level of the sea, was cholera there at all?" It is an old disease at Murree, and this special report will no doubt clear up points on which light is very much wanted.

7. In the meantime here is an account of an infected cholera village which Dr. DeRenzy says may be taken as a fair type of the villages of the Punjab at large:

"Manure heaps and collections of cowdung all around and in the village itself. Houses full of rubbish of every sort. Streets and lanes filthy. A hole in the sweepers' quarters, and two small shallow tanks near the wells with foul water. There were three wells in the village, the water of which is used for drinking purposes; the water was found to be good in colour and taste and free from any smell." (It does not follow that the water was not poisonous.)

For practical purposes this account is worth any amount of discussion about causes of cholera, but it suggests a very obvious question, namely, whether the

It may be suggested for consideration whether the vaccination service together with the civil medical service might not be employed in aiding village improvements while on tours of duty, as is now being tried in other parts of India. The villagers and their officers might in this way be instructed in measures for protecting their own health, especially if a few printed rules in the vernacular were circulated to explain the great dangers of the present condition of villages and the means of removing them.

8. In the Punjab, as in other districts of India, any hope of protection from cordons or quarantine may be considered at an end, and all that now remains to be done is to discard theoretical measures, and to turn to real sanitary work. In furtherance of this object the following sanitary notes, abstracted from the district cholera reports, may be safely taken as guide towards a consistent plan of sanitary improvements so far as they go.

Delhi.—The first known cases of cholera in the Delhi District occurred in the City of Delhi among a body of Chumars (coolies) inhabiting one of the dirtiest quarters, called the 'Kali Masjid Ward'. The state of this part of Delhi, and its relation to cholera outbreaks among the Chumars, has been long known, but hitherto little appears to have been done to improve it.

Simla.—A brief account of the Simla outbreak has been included in our remarks on the report on cholera of the Sanitary Commissioner with the Government of India. The following is Dr. DeRenzy's estimate of its sanitary condition:

"I inspected the sanitarium in April, and its condition appeared to me then to be extremely bad. The public latrine, were indescribably foul, a sickening stench, arising from the filth-soaked wooden rains and cesspool tubs, pervaded the bazaar, and the water-supply was so scanty that people had to wait at the reservoirs for hours before they could fill their water vessels. There was not a single source of water-supply even moderately safe against the foulest pollution. Water being so scarce, it need hardly be said that the poorer classes are most filthy in their persons and dwellings. Nevertheless the Chemical Examiner pronounces the water 'very good', an opinion which possibly may be explained by the water pollution taking place at irregular times. The analyses of samples, if correctly printed, would go to show that Simla possesses the softest and purest water anywhere supplied for use. But the Sanitary Commissioner interprets the results as showing that Simla water, so far as regards albumenoid ammonia, 'is just on a par with the Thames water at London Bridge'."

In 1869 Amritsar had 3,012 cholera deaths. Since that time two huge holes "which served as a receptacle for town sewage" have been filled up. The cholera deaths in 1875 amounted to 756, just a quarter of the former epidemic rate. The reduction cannot, however, be accepted as decided proof of sanitary progress. The outbreak of cholera in 1875 was connected with impure water, and the present report states a fact which no doubt is unfortunately too common all over India, namely, that the mud floors of houses become contaminated with cholera matter, and the poor people still remain crowded in their dwellings. Some remedy should be found for this dangerous habit, more efficient than the present "disinfecting" proceedings. Could not the floor mud be at once dug up and removed, and its place supplied by fresh rammed earth, which is the cleanest and best "disinfectant"? No proceeding which leaves the earth fouled by excreta on the floor can ever obviate danger.

An illustration of the importance of this matter is given in a careful investigation made by the Sanitary Commissioner into an outbreak of cholera in Lahore Lunatic Asylum, which resulted in every probable cause of the persistence of the epidemic being discarded except the pollution of the floors. The practice was to scrape the surface, but, considering the absorbent nature of the material, nothing short of digging away the surface and replacing it with clean earth would be likely to answer, except leaving the place altogether.

In another instance, Lahore Central Jail, there was another source of danger. The prison excreta are deposited in the prison garden, the drainage from which had access to the wells, and re-appeared as ammoniacal and chlorine compounds in the water.

It must be repeated here, we ought never to be buried at all safe distance when mixed with earth them for agricultural use, and that the amount must be no more than

aid, that sewage matters water sources, and only at a right receptacles to prepare excreta are applied as manure, be made use of by a skilled

9. These are the chief points of importance connected with defective local conditions stated in this report, and the remark must be made that the local reporters appear to have been much more occupied with questions of "importation" than with removable sanitary defects, which latter occupy a very small space in the reports on cholera in 1875.

10. *Small-pox*.—When tested by the declining annual mortality from small-pox, there is no part of India in which the success of vaccination has been more marked than in the Punjab. Leaving out fractional parts, the following numbers represent the annual small-pox deaths in thousands since 1866,—30, 20, 24, 53, 27, 25, 23, 25, 12, 13.

These are rough averages for the whole country. But the death-rates differ in different districts, and the reasons as follows: "In the districts So greatly preponderates in the population very strong, and in them also the m Jullundur, Gurdaspur, and other ricts, the people have become so sensible of the advantages of vaccination th petitions to the district authority In these districts the small-pox mor ty is trifling."

The greatest small-pox mortality registered in any one district was in Gurgaon, where Silla, the Goddess small-pox, has a famous temple.

11. *Fevers*.—The Sanitary Commissioner dismisses the enormous registered fever mortality in a few lines, with discussion as to its causes, on account of inaccuracy in the diagnosis. Lieutenant-Governor very properly calls attention to this deficiency, and points out that, "whatever mistakes may be made in registration by inefficient persons, there is no doubt that the mortality from fevers of what is called the paroxysmal type, due to malaria and a defective drainage, is in certain years enormous", and he considers that the attention of the Sanitary Commissioner might be directed to this circumstance, especially as regards the Jullundur Doab, where fever "reached its height in the Town of Jullundur, where upwards of 500 people died in a single week in the present summer out of a population of 32,673", due, in the popular belief, "to the country having become water-logged, the height of the water in the wells having risen two or three feet, and that the only effective remedy is thorough drainage".

The statistics show that fever deaths were registered in every district of the Punjab in 1875, and that no less than 10 per 1,000 of the population died from this assigned cause. In one district, Hoshiarpur, with a population under one million, the registered fever death-rate was 25.13 per 1,000. In Jullundur District, already referred to, it was 21.49 per 1,000. In Jullundur Town the fever death-rate was nearly 25 per 1,000. In Dasuya, a town of 8,453 inhabitants, in Hoshiarpur District, the death-rate assigned to fever exceeded 10 per cent. of the population. In Kamalia, a town of 5,695 inhabitants, in Montgomery District, the fever death-rate was 68.83 per 1,000. These represent some of the highest death-rates in 188 registration circles and towns. But it is a very important fact, in any inquiry into the local causes of these enormous losses from fever, that there are circles and towns within which the death-rates are by no means so high. For instance, in Abbotabad Cantonment, with 2,894 inhabitants, there was only one fever death. At Murree there were 18 fever deaths out of 10,605 inhabitants, equal to a death-rate of 1½ per 1,000. In the same Hoshiarpur District, in which Dasuya, with its 10 per cent. fever death-rate, is situated, the Town of Anandpur shows a death-rate of 7½ per 1,000; and in Jullundur District, with its fever death-rate of nearly 21½ per 1,000, there are two towns showing rates under 10 per 1,000. The practical result of these contrasted rates is to show the necessity for strict local inquiry into the local causes of these losses of life from fever. It would be better, in following out the proposal made by the Lieutenant-Governor, to concentrate attention on a few localities, as was done by Mr. Planck in similar investigations in the North-West Provinces a few years ago. If this course were followed in the Punjab, where extensive irrigation works have been carried out, there is every reason to believe that the results would be obtained. Mr. Planck would be obliged to the Government for this at present, and all that can be done is to take the *prima facie* evidence in the statistics, while in dealing with a few special cases in this nature of the diseases registered as "fevers" might possibly be ascertained.

12. Among death causes requiring notice, 979 were registered from snake-bite, against 930 during the preceding year. Nothing appears to have been done as yet in destroying snakes in this Province. There were 162 deaths from hydrophobia in 1875, and 173 in the preceding year—an enormous mortality from this cause.

13. *Sanitary Progress*.—The municipalities are engaged in carrying out the current sanitary work, but there is not much to report in the way of permanent improvement during the year.

Delhi has spent 5,509% on sanitary measures, and 3,083% on roads and bridges. The water-supply scheme is in the process of settlement, and we agree with the municipal authorities that ten gallons per head per day would not be sufficient for the drainage requirements of the city.

Lahore has had a water-supply and drainage scheme under consideration. The former is sanctioned, but there appears to be so much difficulty with the drainage scheme, on account of a proposal to make the sewers large enough to carry off excessive floods, or three-fourths of an inch of rain per hour. There is a table of rainfall in the present report, which shows that in 1875 there were only 26 rainy days in the year, and that the greatest rainfall in any one day was 6.2 inches. The total rainfall for the last seven years at Lahore is given in the table as follows:

	Rain. (Inches.)
1869	20.1
1870	9.2
1871	8.7
1872	20.3
1873	19.2
1874	15.0
1875	33.2

The proposal is to keep the house sewage out of the sewers, and to adapt them to carry off an occasional flood, the probable recurrence of which may possibly be estimated from these data. In this way, an enormous outlay would have to be permanently incurred for an occasional flood, which might possibly be provided against by surface drainage and improvements, while in the intervals between the rainy days the whole sewage system would generate noxious gases from the deposit left by dirt and street washings, and all the time the city would be as much in need of sewerage and drainage as if the expenditure, estimated at 47,233%, had never been incurred. We must again repeat what has often been said on this subject. In India provision should be made for exceptional rainfall by surface drainage, and in cities the sewers should be devoted chiefly to removing domestic sewage and foul water, and their dimensions should be proportioned to the work they have to do. On the facts as they stand, Dr. DeKenzy was apparently justified in withholding his approval from the scheme, which indeed appears to require reconsideration.

Rawal Pindi is in great need of a water-supply, and a scheme, involving an outlay of 20,000%, is under consideration.

The water-supply of Peshawar has got the length of settling and filtering tanks, but it is not yet decided by the civil authorities whether the water is to be extended to the city, or whether the new water-supply will only be limited to cantonments. The authorities appear not to be convinced that the city surface wells are insufficient. It will be a great advantage to have the water for cantonments, but if the city authorities have doubts as to its necessity, it may be suggested whether they might not advantageously have the wells on which they depend examined, and their water submitted to chemical analysis. The sooner the city is supplied with water, the better for health.

A list of 27 towns is given in which a few sanitary carried out, chiefly surface improvements, clearing pavements, levelling, filling up holes, &c.

All this is in the right direction, but the excessive death-rates in some of the principal centres of population, already referred to, are sufficient to show that the evils lie deeper than the mere surface. The following abstract will show the proportion of death causes in 1875 in the first four cities in the list already given:

Ratio of deaths per 1,000 of population.					
	Cholera	Small-pox.	Fevers.	Bowel complaints.	All causes.
Amritsar	5.52	.06	33.19	3.50	62
Delhi	.40	1.01	23.81	3.74	51
Lahore	.40	1.31	27.83	2.00	47
Peshawar	...	0.99	15.37	2.20	45

There can be no mistake about the importance of the local causes which predispose to fever in these towns, the statistics of which are considered reliable. These causes ought to be brought to light, and dealt with. In the Punjab, as in other parts of India, it will be most advantageous probably to get a few bad cases in hand, where there are municipal authorities, as soon as possible, for the obvious reason that experience obtained in this way teaches a far more direct lesson than mere repetition of principle.

14. The case is different, however, with village populations, who have to do most of their own work, and in this with pleasure the Commission quotes the following paragraph from the present report to show one excellent step which is being taken with these cases. Dr. DeRenzy says—

"Under the orders of His Honor the Lieutenant-Governor, I held conferences with 18 district committees, with a view of impressing upon them the necessity of improving the sanitary state of villages under their respective jurisdiction. In fulfilment of my instructions, I prepared a pamphlet describing the history and embodying the elementary principles of sanitary science, and I gave at the meetings ocular demonstrations of the effect of sewage on water. The course of procedure followed was that the pamphlet was first read, and afterwards demonstrations made in proof of some of the statements contained in it. The members were then encouraged to ask questions and to offer any objections that occurred to them. The questions were then discussed patiently and considerately. I made no attempt to compel the meetings to any hasty resolutions, but asked them to think over what they had heard and seen, and a copy of the pamphlet was presented to each member. I was most agreeably surprised at the interest which these meetings seemed to excite, and the pamphlet has been in such request that it has been necessary to print 22,000 copies of it for circulation among the village population. . . . The conferences lately held will, I believe, ultimately be of the greatest use in directing the minds of the people to sanitary evils of which they had previously no conception.

The interest taken in this work by the people themselves is perhaps the best guarantee for its resulting in ultimate good. Dr. DeRenzy deprecates any attempt at forcing improvements on the people for which they are not prepared, but it may be suggested whether the proposal already made of enlisting the vaccination officers and Civil Surgeons in the work might not be a practicable step in advance. Both classes of officers are recognized by the people as acting for their good, and it seems that on this basis the village populations and their officers might be disposed to act on advice given them regarding cleansing of villages and houses, removal of nuisances, filling up water holes, and levelling surfaces, protecting wells and tanks and the like from pollution, and in this way much useful work might be done without pressure.

Two other points to which attention may be called.

Punjab was very high in 1875. In 30 jails it averaged 1.18 was due to cholera. The lowest death-rates were in the Punjab. From this ratio the death-rates ascend to 1.140 per 1,000.

The chief death causes were—

Intermittents and remittents	94 deaths.
Dysentery and diarrhoea	110 "
Pneumonia	98 "
	202 deaths.

The total deaths were 456. The chief death causes point to the need of inquiry as to their origin.

16. The Lawrence Asylums gave the following results during 1875.

In the Asylum at Murree there were 59 inmates between 5 and 10 years of age, 82 from 10 to 15, 11 from 15 to 20; in all 152. There were two deaths among them, one from measles.

In the Asylum at Sanawar there were 175 inmates between 5 and 10 years of age, 211 between 10 and 15, and 45 between 15 and 20; in all 431 inmates. Amongst these there were 4 deaths among boys and 0 among girls. The following were the death causes:

Enteric fever	4
Epilepsy	1
Heart disease	1
Respiratory ditto	1
Dysentery and diarrhoea	2
Others	1
Total	10

The most noteworthy fact in the statistics of these schools is the absence of enteric fever at Murree and its presence at Sanawar. A number of years ago attention was called to this fact, and to the very probable origin of the disease in water polluted by filth. Nothing appears to have been done to remedy the evil, for Dr. DeRenzy says that the "water-supply of the institution remains in the unsatisfactory state described in previous reports".

Dr. DeRenzy suspects impure milk as a cause, but there is no source of this kind which does not probably exist at Murree. He does not think the evidence against milk sufficient, but there can be no doubt, from his account of the places it is got from, that it cannot be quite good. It may be suggested whether these institutions might not provide their own milk. As far as regards the water-supply it may be safely stated that Sanawar Asylum will not be free of enteric disease until good water properly distributed is provided for the children.

17. These are the chief points of practical importance in the Punjab sanitary report for 1875.

It was natural that the cholera epidemic, and the contested questions connected with it, should have occupied a prominent share of attention, but the losses from cholera, when compared with the losses from constantly acting death causes, especially those included under the designation of "fevers", show that future progress in sanitary improvement must be mainly in two directions—

the enormous death-rates in the chief towns.

Other matters of detail already in hand may be left to the judgment of the Sanitary Commissioner, whose practical work, especially in creating a public opinion on behalf of local improvements, is worthy of commendation.

30th May 1877.

No. 16/345

Copy forwarded to all Provincial Governments and Administrations and to the Military and Public Works Departments for information.

* Except Punjab.

By Order of Governor General of India in Council,

HOME DEPARTMENT,
SANITARY,
Fort William;
The 19 December 1877.

H. F. L. Danks

Under Secretary to the Govt. of India.

Order thereon of 4 January 1878.. N: 15

Communicated to the Board of Revenue and to the Sanitary Commissioner.

(True Extract)

J. H. P. W. H.
Under Secretary.

Exd.—D. N. M.

File

Press—No. 419—17-12-77—192

L. H. M.

✓
Revenue 1878 Sept^r

N^o. 23.

Pro. of Gov^t. Public Dep^t

Dated 4 }
Recd 4 } Jan^r

Dep^t N^o. 15.

Communicating
Resolution of Gov^t. of India
on Despatch from Sec^y. of
State forwarding Memorandum
of the Army Sanitary
Commission on the Report
of the Sanitary Commission
for the Punjab for 1875.
N^o. 76

Recorded

G. W.

9: f